CLAIMS

What is claimed is:

1. An apparatus for deciphering a variable width cipher data packet comprising:

a variable width-fixed width cipher data packet conversion unit which, if a fixed width is a width of a cipher data packet to be processed in a deciphering process and is a multiple of a variable width, which is a width of an arbitrary cipher data packet input by an arbitrary interface module, the variable width-fixed width cipher data packet conversion unit sequentially receives a number of variable width cipher data packets, the number of which being the same as that of a combination value, which is obtained by dividing the fixed width by the variable width, combines the number of sequentially input variable width cipher data packets received to generate a fixed width cipher data packet and outputs the fixed width cipher data packet; and

a deciphering unit which deciphers the fixed width cipher data packet output from the variable width-fixed width cipher data packet conversion unit to generate a fixed width data packet and outputs the fixed width data packet.

2. The apparatus of claim 1, wherein the variable width-fixed width cipher data packet conversion unit divides the fixed width data packet output from the deciphering unit into the number of variable width data packets, the number of which being the same as that of the combination value, to generate the number of variable width data packets, and sequentially outputs the number of the generated variable width data packets.

3. The apparatus of claim 1, wherein if the variable width is a multiple of the fixed width, the variable width-fixed width cipher data packet conversion unit receives the variable width cipher data packet, divides the received variable width cipher data packet into a number of fixed width cipher data packets, the number of which being the same as that of a separation value, that is obtained by dividing the variable width by the fixed width to generate the number of fixed width cipher data packets, and sequentially outputs the number of fixed width data packets generated, and the deciphering unit deciphers the number of fixed width cipher data packets output from the variable width-fixed width cipher data packet conversion unit to generate the number of fixed width data packets, the number of which being the same as that of

the separation value, and outputs the number of fixed width data packets generated.

4. The apparatus of claim 3, wherein the variable width-fixed width cipher data packet conversion unit sequentially receives the number of fixed width data packets output from the deciphering unit, combines the number of fixed width data packet to generate a variable width data packet and outputs the variable width data packet.

5. The apparatus of claim 1, wherein the deciphering unit comprises:

a fixed width cipher data packet storage unit which stores the fixed width cipher data packet generated in the variable width-fixed width cipher data packet conversion unit;

a fixed width-deciphering width cipher data conversion unit which converts the fixed width cipher data packet stored in the fixed width cipher data packet storage unit into deciphering width cipher data;

a deciphering width cipher data deciphering unit which deciphers the deciphering width cipher data converted in the fixed width-deciphering width data conversion unit to generate deciphering width data;

a deciphering width-fixed width data packet conversion unit which converts the deciphering width data generated in the deciphering width cipher data deciphering unit into the fixed width data packet; and

a fixed width data packet storage unit which stores the fixed width data packet converted in the deciphering width-fixed width data packet conversion unit.

6. The apparatus of claim 5, wherein:

if the deciphering width data is generated, the deciphering width cipher data deciphering unit generates and outputs a deciphering completion signal;

the deciphering unit further comprises:

a deciphering control unit and if the deciphering completion signal output from the deciphering width cipher data deciphering unit is received, generates and outputs a fixed width-deciphering width conversion signal, and

if the fixed width-deciphering width conversion signal output from the deciphering control unit is received, the fixed width-deciphering width cipher data conversion unit converts the fixed width cipher data packet stored in the fixed width cipher data packet storage unit into the deciphering width cipher data.

7. A method of deciphering a variable width cipher data packet, comprising:

if a fixed width is a width of a cipher data packet to be processed in a deciphering process and is a multiple of a variable width, which is a width of an arbitrary cipher data packet input by an arbitrary interface module, sequentially receiving a number of variable width cipher data packets, the number of which being the same as that of a combination value, which is obtained by dividing the fixed width by the variable width, combining the number of sequentially input variable width cipher data packets, the number of which being the same as that of the combination value, to generate a fixed width cipher data packet and outputting the fixed width cipher data packet; and

deciphering the fixed width cipher data packet to generate a fixed width data packet and outputting the fixed width data packet.

8. The method of claim 7, further comprising:

dividing the fixed width data packet to generate the number of variable width data packets, the number of which being the same as that of the combination value, and sequentially outputting the number of the generated variable width data packets.

9. The method of claim 7, wherein in the generating and outputting of the fixed width cipher data packet, if the variable width is a multiple of the fixed width and the variable width cipher data packet is received, the received variable width cipher data packet is divided into a number of fixed width cipher data packets, the number of which being the same as that of a separation value, that is obtained by dividing the variable width by the fixed width to generate the number of divided fixed width cipher data packets and the number of fixed width cipher data packets generated is sequentially output, and

in the generating and outputting the fixed width data packet, the number of outputted fixed width cipher data packets is deciphered to generate the number of fixed width data packets, the number of which being the same as that of the separation value, and the number of generated fixed width data packets is output.

10. The method of claim 9, wherein in the generating and outputting of the fixed width cipher data packet, the number of outputted fixed width data packets, the number of which being the same as that of the separation value are sequentially received, the number of sequentially received fixed width data packet is combined to generate a variable width data packet and the variable width data packet is output.

11. The method of claim 7, wherein the generating and outputting the fixed width data packet comprises:

storing the fixed width cipher data packet,

converting the stored fixed width cipher data packet into deciphering width cipher data;

deciphering the converted deciphering width cipher data to generate a deciphering width data;

converting the deciphering width data into a fixed width data packet; and

storing the converted fixed width data packet.

12. The method of claim 11, wherein in the generating of the deciphering width data, if the deciphering width data is generated, generating and outputting a deciphering completion signal, the method further comprising:

generating and outputting a fixed width-deciphering width conversion signal if the deciphering completion signal output in the generating of the deciphering width data is received,

in the converting into deciphering width cipher data, if the fixed width-deciphering width conversion signal is received, converting the stored fixed width cipher data packet into deciphering width cipher data.

13. A variable width-fixed width data packet conversion method comprising:

if a fixed width that is the width of a data packet processed inside a system is a multiple of a variable width that is a width of an arbitrary data packet input from the outside of the system, sequentially receiving a number of variable width first data packets, the number of which being the same as that of a combination value, that is obtained by dividing the fixed width by the variable width;

combining the number of sequentially input variable width first data packets received to generate the fixed width first data packet; and

outputting the generated fixed width first data packet.

14. The method of claim 13, wherein the generating of the fixed width first data packet comprises:

sequentially storing the number of sequentially input variable width first data packets; and

by combining the number of sequentially stored variable width first data packets, generating the fixed width first data packet.

15. The method of claim 14, wherein the generating of the fixed width first data packet comprises:

counting a value obtained by subtracting 1 from the combination value;

generating a combination signal whenever the value is counted;

outputting the generated combination signals; and

in the generating of the fixed width first data packet, whenever a combination signal output from a combination value count unit is received, the number of stored variable width first data packets is sequentially combined.

16. The method of claim 13, further comprising:

if the variable width is a multiple of the fixed width, receiving a variable width first data packet;

dividing the received variable width first data packet into a number of fixed width first data packets, the number of which being the same as that of a separation value, that is obtained by dividing the variable width by the fixed width to generate the number of divided fixed width first data packets; and

sequentially outputting the number of generated fixed width first data packets.

17. The method of claim 13, further comprising:

sequentially receiving the number of fixed width second data packets, the number of which being the same as that of a separation value, that is obtained by dividing the variable width by the fixed width,

combining the number of sequentially received fixed width second data packets to generate the variable width second data packet; and

outputting the generated variable width second data packet.

18. The method of claim 17, wherein the generating of the variable width second data packet comprises:

sequentially storing the number of sequentially received fixed width second data packets; and

combining the sequentially stored fixed width second data packets to generate the variable width second data packet.